

# EQUITY

## HIGH NOBLE WHITE PORCELAIN ALLOY

**EQUITY** was born during the astronomical palladium market of 2000-01. EQUITY remains a popular alloy in Jensen's High Noble lineup even today. A well balanced composition offering excellent strength and hardness, EQUITY behaves well in the laboratory and is a very easy alloy to use. A high melting range helps keep EQUITY margins and bridges stable with repeated firings, and allows for the use of higher fusing solders. EQUITY has a moderate thermal expansion, and works well with most ceramics including Creation CC.

| PROPERTIES                       |                                       |
|----------------------------------|---------------------------------------|
| Melting Range                    | 2110-2280°F<br>1155-1250°C            |
| Coefficient of Thermal Expansion |                                       |
| from 25°C to 500°C               | 14.2x10 <sup>-6</sup> K <sup>-1</sup> |
| from 25°C to 600°C               | 14.6x10 <sup>-6</sup> K <sup>-1</sup> |
| Density                          | 15.4 g/cm <sup>3</sup>                |

| CHEMISTRY                                |     |
|------------------------------------------|-----|
| Gold                                     | 68% |
| Palladium                                | 22% |
| Silver                                   | 3%  |
| Indium                                   | 7%  |
| Contains less than 1% Ruthenium, Rhenium |     |
| Au & Pt Group - 90%                      |     |
| Classification - High Noble              |     |

| AFTER PORCELAIN FIRING             |                                          |
|------------------------------------|------------------------------------------|
| Hardness                           | 240 HV                                   |
| Tensile Elongation                 | 11%                                      |
| TensileYield Strength/Proof Stress | 79,700 psi (550 MPa)                     |
| Ultimate Tensile Strength          | 98,500 psi (680 MPa)                     |
| Modulus of Elasticity              | 17.2 x 10 <sup>6</sup> psi (118,000 MPa) |

### PROCESSING TECHNIQUE

|                            |                                                                                                                                                                                                                                                                                                               |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>WAXING</b>              | 0.3mm for single units and 0.5mm for bridgework                                                                                                                                                                                                                                                               |
| <b>INVESTMENT</b>          | Phosphate-bonded high heat investment with or without carbon                                                                                                                                                                                                                                                  |
| <b>BURNOUT</b>             | 1400°F (760°C)                                                                                                                                                                                                                                                                                                |
| <b>MELTING AND CASTING</b> | Wind the casting arm one more time than normal (3-4 winds). Multi-orifice torch: 10 psi fuel and 20 psi oxygen (0.7 bars fuel and 1.4 bars oxygen). Heat until cloudy surface clears before releasing the casting arm. <b>DO NOT OVERHEAT. DO NOT USE CASTING FLUX.</b> Casting temperature ~2400°F (1315°C). |
| <b>FINISHING</b>           | Finish with aluminum oxide stones. Blast porcelain receiving surfaces with non-recycled aluminum oxide. Clean in ultrasonic for 10 minutes.                                                                                                                                                                   |
| <b>OXIDATION</b>           | Oxidize from 1200°F (650°C) to 1800°F (980°C) at 145°F/min (80°C/min) in air with 5 minute hold time. Bench cool. Proceed with normal opaque technique.                                                                                                                                                       |
| <b>SOLDERING</b>           | Pre-solder: P-80 Solder or LX Solder<br>Post-solder: 1400 Solder<br>Flux: Brown Fluoride Flux (for both pre & post soldering)                                                                                                                                                                                 |

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